



June 24, 2015

ALS1506116

Ft. Collins, Colorado

LIMS Version: 6.768

Page 1 of 1

Wednesday, June 24, 2015

Bob Evans  
CH2M HILL Plateau Remediation Company  
2420 Stevens Center  
Richland, WA 99352

Re: ALS Workorder: 1506116  
Project Name: 200W Pump & Treat - FBR Micronutrient Analysis - Water  
Project Number: F13-018

Dear Mr. Evans:

Four water samples were received from CH2M HILL Plateau Remediation Company, on 6/5/2015. The samples were scheduled for the following analysis:

Metals

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

A handwritten signature in black ink, appearing to read "Julie Ellingson".

ALS Environmental  
Julie Ellingson  
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New Jersey (NJ)	CO003
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

**ALS Environmental -- FC****Sample Number(s) Cross-Reference Table**

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**OrderNum:** 1506116**Client Name:** CH2M HILL Plateau Remediation Company**Client Project Name:** 200W Pump & Treat - FBR Micronutrient Analysis - Water**Client Project Number:** F13-018**Client PO Number:** BOA 54854

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B2Y626	1506116-1		WATER	04-Jun-15	11:40
B2Y630	1506116-2		WATER	04-Jun-15	12:30
B31MT6	1506116-3		WATER	04-Jun-15	12:45
B31MV1	1506116-4		WATER	04-Jun-15	12:15

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COLLECTOR CHRIS FULTON CHPRC		COMPANY CONTACT		PROJECT COORDINATOR		PAGE 1 OF 1
SAMPLING LOCATION	EVANS, RT	TELEPHONE NO.	373-7924	SAF NO.	F13-018	DATA TURNAROUND 15 Days / 15 Days
289-T, Influent Tank, Valve V04-Y30		PROJECT DESIGNATION	200W Pump & Treat - FBR Micronutrient Analysis - Water	AIR QUALITY	<input type="checkbox"/>	
ICE CHEST NO. 445 ANHAT	600S-431	FIELD LOGBOOK NO.	HNF-N-4919	ACTUAL SAMPLE DEPTH	(N/A)	METHOD OF SHIPMENT
SHIPPED TO	ALS Environmental Ft Collins	OFFSITE PROPERTY NO.	444-618	COA	303110	FEDERAL EXPRESS
		PRESERVATION	Acid 6/4/15 <sup>HNO3 to pH &lt;2</sup>	BILL OF LADING/AIR BILL NO.	7037 U74 3523	
		HOLDING TIME	6 Months			
		TYPE OF CONTAINER	G/P			
MATRIX*		NO. OF CONTAINER(S)	1			
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other		VOLUME	500mL	SEE ITEM (1) IN SPECIAL INSTRUCTIONS		
		SAMPLE ANALYSIS				
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2Y626	WATER	JUN 04 2015	1140	JUN 04 2015 1330		

\*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/ IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

## SPECIAL HANDLING AND/OR STORAGE

N/A

1506116-1

JUN 04 2015 1330

FILTER

## SPECIAL INSTRUCTIONS

Filtering shall be performed by SGRP Field Sampling Services using a (0.45 $\mu$ m) filter while in the field. The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRLV-15-095

- (1) 6020\_METALS\_ICPMS: COMMON {Aluminum, Chromium, Cobalt, Copper, Molybdenum, Selenium}; 6020\_METALS\_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Strontium, Zinc};
- 6010\_METALS\_ICP: COMMON {Calcium, Iron, Magnesium}; 6010\_METALS\_ICP: COMMON (Add-on) {Boron, Phosphorus};

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		DATE/TIME	
RELINQUISHED BY/REMOVED FROM	CHRIS FULTON CHPRC	RECEIVED BY/STORED IN	JUN 04 2015 1330	RECEIVED BY/STORED IN	JUN 04 2015 1330
RELINQUISHED BY/REMOVED FROM	L.D. WALL CHPRC	CHPRC	X.O.Wall	CHPRC	X.O.Wall
RELINQUISHED BY/REMOVED FROM	FED EX	RECEIVED BY/STORED IN	JUN 04 2015 1400	RECEIVED BY/STORED IN	JUN 04 2015 1400
RELINQUISHED BY/REMOVED FROM		FEDEX	SCOTT MCKEEY	FEDEX	SCOTT MCKEEY
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	06/05/15 0925	RECEIVED BY/STORED IN	06/05/15 0925
RELINQUISHED BY/REMOVED FROM		DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

RECEIVED BY Scott Mckeeby  
DISPOSAL METHOD  
FINAL SAMPLE DISPOSITION

DATE/TIME

06/05/15 / 0925  
DATE/TIME

June 24, 2015

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CH2MHILL Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F13-018-291		PAGE 1 OF 1
COLLECTOR	CHRIS FULTON CHPRC	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
SAMPLING LOCATION	EVANS, RT		373-7924	EVANS, RT	7C	15 Days / 15 Days
289-T, FBR-A Effluent, valve V25-Y40A1 ICE CHEST NO.	HNF-N- <u>4919</u>	PROJECT DESIGNATION	200W Pump & Treat - FBR Micronutrient Analysis - Water	SAF NO. F13-018	AIR QUALITY	<input type="checkbox"/>
SHIPPED TO	ALS Environmental Ft. Collins	FIELD LOGBOOK NO.	(N/A)	ACTUAL SAMPLE DEPTH	COA	METHOD OF SHIPMENT
	600S-431	OFFSITE PROPERTY NO.	(N/A)	(N/A)	303110	FEDERAL EXPRESS
		BILL OF LADING/AIR BILL NO.				
MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	HNO3 to pH <2			
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other N/A	* Contains Radioactive Material at Concentrations that are not be regulated for transportation per 49 CFR/ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	HOLDING TIME	6 Months			
		TYPE OF CONTAINER	G/P			
		NO. OF CONTAINER(S)	1			
		VOLUME	500ml.			
		SAMPLE ANALYSIS	SEE ITEM(1) IN SPECIAL INSTRUCTIONS			
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2Y630	WATER	JUN 04 2015	1230	✓		
FILTER						
CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS		
RELINQUISHED BY/REMOVED FROM <u>CHRIS FULTON</u> CHPRC	DATE/TIME JUN 04 2015 1330	RECEIVED BY/STORED IN L.D. Wall	DATE/TIME JUN 04 2015 1330	DATE/TIME 04/05/15 0925	Filtering shall be performed by SGRP Field Sampling Services using a (0.45µm) filter while in the field. The 200 Area S&GPM Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRL-15-095	
RELINQUISHED BY/REMOVED FROM <u>fedex</u>	DATE/TIME JUN 04 2015 1400	RECEIVED BY/STORED IN <u>fedex</u>	DATE/TIME 06/05/15 0925	DATE/TIME 06/05/15 0925	(1) 6020_METALS_ICPMS: COMMON {Aluminum, Chromium, Cobalt, Copper, Molybdenum, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Strontium, Zinc}; 6010_METALS_ICP: COMMON {Calcium, Iron, Magnesium}; 6010_METALS_ICP: COMMON (Add-on) {Boron, Phosphorus};	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME		
RELINQUISHED BY/REMOVED FROM <u>Sc</u> 06/27	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME		
RELINQUISHED BY/REMOVED FROM <u>Sc</u> 06/27	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME		
LABORATORY OR SECTION FINAL SAMPLE DISPOSITION	RECEIVED BY Sc 06/27	TITLE				DISPOSED BY
		DATE/TIME				DATE/TIME
		DATE/TIME				DATE/TIME

June 24, 2015

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CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			
COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	PAGE 1 OF 1
CHRIS FULTON CHPRC	EVANS, RT	373-7924	EVANS, RT	7C	DATA TURNAROUND
SAMPLING LOCATION	289-T, FBR-B Effluent, valve V25-Y40B1		SAF NO. F13-018		15 Days / 15 Days
ICE CHEST NO.	HNF-N-4919	ACTUAL SAMPLE DEPTH (N/A)	COA		
SHIPPED TO	ALS Environmental Ft. Collins	BILL OF LADING/AIR BILL NO.			
		5698			
MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS				
A=Air Dl=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<p>*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/ATA Dangerous Goods Regulations but are not releasable per DOE Order 438.1.</p>				
SPECIAL HANDLING AND/OR STORAGE N/A					
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B31MT6	WATER	JUN 04 2015	1245	✓	

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CHRIS FULTON	JUN 04 2015 1330	CHPRC	JUN 04 2015 1330
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
L.D. Well	JUN 04 2015 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
fed ex	06/05/15 0925	Scott Mally	06/05/15 0925
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

1506116-3

LABORATORY	RECEIVED BY	DATE/TIME	DISPOSAL METHOD	DATE/TIME
FINAL SAMPLE DISPOSITION				

**ORIGINAL**

7/7/30 6/174 3523

**FILTER**

**SPECIAL INSTRUCTIONS**

Filtering shall be performed by SGRP Field Sampling Services using a (0.45µm) filter while in the field. The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRLV-15-095

(1) 6020\_METALS\_ICPMS: COMMON {Aluminum, Chromium, Cobalt, Copper, Molybdenum, Selenium}; 6020\_METALS\_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Strontium, Zinc}; 6010\_METALS\_ICP: COMMON {Calcium, Iron, Magnesium}; 6010\_METALS\_ICP: COMMON (Add-on) {Boron, Phosphorus};

TRLV-15-095

TITLE  
DISPOSED BY

06/05/15 /oars  
DATE/TIME  
DATE/TIME

June 24, 2015

ALS1506116

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			
COLLECTOR	CHRIS FULTON CHPRC	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PAGE 1 OF 1
SAMPLING LOCATION	289-T, Effluent Tank, Valve V07-Y80D	PROJECT DESIGNATION 200W Pump & Treat - FBR Micronutrient Analysis - Water		SAF NO. F13-018	DATA TURNAROUND 15 Days / 15 Days
ICE CHEST NO.	GWS-431	FIELD LOGBOOK NO. HNF-N-4919	ACTUAL SAMPLE DEPTH (N/A)	COA 303110	METHOD OF SHIPMENT FEDERAL EXPRESS
SHIPPED TO	AES Environmental Ft. Collins	OFFSITE PROPERTY NO.	5698	BILL OF LADING/AIR BILL NO. #103161743523	
MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radactive Material at concentrations that are not be regulated for transportation per 49 CFR/ IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.				
A=Air D=Drum Liquids DS=Drum Solids L=Liquid O=Oil So=Soil SE=Sediment T=Tissue V=Vegetation W=Water Wi=Wine X=Other	PRESERVATION HNO3 to pH <2	HOLDING TIME 6 Months	TYPE OF CONTAINER G/P	NO. OF CONTAINER(S) 1	VOLUME 500mL
SPECIAL HANDLING AND/OR STORAGE N/A					
SAMPLE NO.	MATRIX*	SAMPLE DATE JUN 04 2015	SAMPLE TIME 1215 ✓		
B31MV1	WATER				
1506116-4					
FILTER					
CHAIN OF POSSESSION		SIGN/ PRINT NAMES			
RELINQUISHED BY/REMOVED FROM CHRIS FULTON CHPRC	DATE/TIME JUN 04 2015 1300	RECEIVED BY/STORED IN L.D. Wall	DATE/TIME JUN 04 2015 1400	RECEIVED BY/STORED IN FEDEX	DATE/TIME JUN 04 2015 1320
RELINQUISHED BY/REMOVED FROM L.D. Wall	DATE/TIME JUN 04 2015 1400	RECEIVED BY/STORED IN Sgt. Scott Malley	DATE/TIME JUN 06/05/15 0925	RECEIVED BY/STORED IN	DATE/TIME JUN 06/05/15 0925
RELINQUISHED BY/REMOVED FROM Fed ex X-05-15	DATE/TIME 0925	RECEIVED BY/STORED IN	DATE/TIME RECEIVED BY/STORED IN	RECEIVED BY/STORED IN	DATE/TIME RECEIVED BY/STORED IN
RELINQUISHED BY/REMOVED FROM 7	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM 7	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JLABORATORY OR SECTION FINAL SAMPLE DISPOSITION	RECEIVED BY Scot	TITLE Scot	DATE/TIME 0925	DISPOSED BY Scot	DATE/TIME 0925
PRINTED ON 5/20/2015					

June 24, 2015

ALS1506116



**ALS Environmental - Fort Collins**  
**CONDITION OF SAMPLE UPON RECEIPT FORM**

Client: CHPRC  
 Project Manager: JME

Workorder No: 1506116  
 Initials: SPM Date: 6.5.15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	NO
2. Are custody seals on shipping containers intact?		NONE	YES NO
3. Are Custody seals on sample containers intact?		NONE	YES NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		YES	NO
5. Are the COC and bottle labels complete and legible?		YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		YES	NO
7. Were airbills / shipping documents present and/or removable?		DROP OFF	YES NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)		N/A	YES NO
9. Are all aqueous non-preserved samples pH 4-9?		N/A	YES NO
10. Is there sufficient sample for the requested analyses?		YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		YES	NO
12. Are all samples within holding times for the requested analyses?		YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: _____ < green pea _____ > green pea		N/A	YES NO
15. Do any water samples contain sediment?		Amount	
Amount of sediment: ____ dusting ____ moderate ____ heavy		N/A	YES NO
16. Were the samples shipped on ice?		YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C?		IR gun used*: #2	#4 RAD ONLY YES NO
Cooler #: <u>1</u>			
Temperature (°C): <u>0.8</u>			
No. of custody seals on cooler: <u>2</u>			
External µR/hr reading: <u>12</u>			
Background µR/hr reading: <u>12</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <u>YES</u> / NO / NA (If no, see Form 008.)			

**Additional Information:** PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

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If applicable, was the client contacted? YES / NO / NA Contact: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Project Manager Signature / Date: JME 6/5/15

\*IR Gun #2: Oakton, SN 29922500201-0066

\*IR Gun #4: Oakton, SN 2372220101-0002

June 24, 2015

ALS1506116

1506116

From: (509) 528-9426  
Lesly Wall  
CH2M  
6267 Letah St.  
6269 Letah St.  
Richland, WA 99354

Origin ID: PSCA

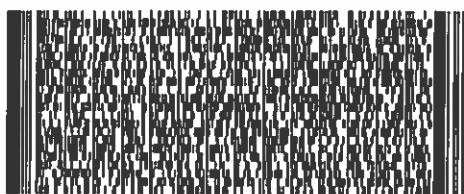


Ship Date: 04JUN15  
ActWgt: 50.0 LB  
CAD: 107068051/NET3610

SHIP TO: (970) 490-1511  
Julie Ellingson  
ALS Global  
225 Commerce Drive

BILL THIRD PARTY

FORT COLLINS, CO 80524



Delivery Address Bar Code



Ref # ptr# 5698  
Invoice #  
PO #  
Dept #

TRK# 7737 6174 3523  
0201

1/2  
FRI - 05 JUN 10:30A  
PRIORITY OVERNIGHT

DSR  
80524  
CO-06  
DEN

XH FTCA



537416A0EE46

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## Metals Case Narrative

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### **CH2M HILL Plateau Remediation Company**

200W Pump & Treat – FBR Micronutrient Analysis - Water -- F13-018

Work Order Number: 1506116

1. This report consists of 4 water samples.
2. The samples were received cool and intact by ALS on 06/05/15.
3. The samples had a pH less than 2 upon receipt.
4. The samples were prepared and analyzed based on SW-846, 3<sup>rd</sup> Edition procedures.

For analysis by Trace ICP and ICP-MS, the samples were digested following method 3005A and the current revision of SOP 806.

5. Analysis by Trace ICP followed method 6010B and the current revision of SOP 834.

Analysis by ICP-MS followed method 6020A and the current revision of SOP 827.

6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
7. The samples were prepared and analyzed within the established hold times.

All in house quality control procedures were followed, as described below.

8. General quality control procedures.

- A preparation (method) blank and laboratory control sample were digested and analyzed with the samples in this digestion batch.
- The preparation (method) blank associated with this digestion batch was below the reporting limit for the requested analytes. Iron and phosphorus have results above the MDL. Sample results have been compared to the blank results.



- All laboratory control sample criteria were met.
- All initial and continuing calibration blanks were below the reporting limit for the requested analytes.
- All initial and continuing calibration verifications were within the acceptance criteria for the requested analytes.
- The interference check samples and high standard readbacks associated with Method 6010B were within acceptance criteria.
- The interference check samples associated with Method 6020A were analyzed.

9. Matrix specific quality control procedures.

Sample 1506116-1 was designated as the quality control sample for each analysis.

Similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
- A sample duplicate and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met with the following exception:

Analyte	Sample ID
Selenium	1506116-1D

The native sample result is flagged for duplicate failure.

- A serial dilution was analyzed with each ICP batch. All acceptance criteria were met..

10. It is a standard practice that samples for ICP-MS are analyzed at a dilution. The 10X factor can be considered an artifact of the prep and does not indicate a secondary dilution and is therefore not flagged as a dilution.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

  
\_\_\_\_\_  
Jill Latelle  
Inorganics Primary Data Reviewer

\_\_\_\_\_  
6/19/15  
Date

  
\_\_\_\_\_  
Julie Ellis  
Inorganics Final Data Reviewer

\_\_\_\_\_  
6/24/15  
Date



### **Inorganic Data Reporting Qualifiers**

The following qualifiers are used as needed by the laboratory when reporting results of inorganic analyses.

- Result qualifier -- A "B" is entered if the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL). If the analyte was analyzed for but not detected a "U" is entered. For samples, negative values are reported as non-detects ("U" flagged). For blanks, if the absolute value of the negative value is above the MDL and below the reporting limit, then the result is "B" flagged.
- QC qualifier -- Specified entries and their meanings are as follows:
  - E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
  - M - Duplicate injection precision was not met.
  - N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
  - Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
  - \* - Duplicate analysis (relative percent difference) not within control limits.
  - S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.
  - C - The analyte was detected in both the sample and the associated QC blank, and the sample concentration was <=5X the blank concentration.
  - D - Analyte was reported at a secondary dilution factor, typically DF>1 (i.e., the primary preparation required dilution to either bring the analyte within the calibration range or to minimize interference). Required for organics/wetchem if the sample was diluted.

June 24, 2015

ALS1506116

# Dissolved ICP Metals

## Method SW6010B

### Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F13-0

Field ID:	B2Y626
Lab ID:	1506116-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 04-Jun-15

Date Extracted: 15-Jun-15

Date Analyzed: 16-Jun-15

Prep Method: SW3005 Rev A

Prep Batch: IP150615-5

QCBatchID: IP150615-5-1

Run ID: IT150616-1A2

Cleanup: NONE

Basis: As Received

File Name: 150616a.

Analyst: Steve Workman

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	43	30	6.8		
7440-70-2	CALCIUM	1	63000	1000	18		
7439-89-6	IRON	1	24	50	16	B,C	
7439-95-4	MAGNESIUM	1	22000	750	22		
7723-14-0	PHOSPHORUS	1	41	50	14	B,C	

Data Package ID: it1506116-1

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ALS1506116

# Dissolved ICP Metals

## Method SW6010B

### Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F13-0

Field ID:	B2Y630
Lab ID:	1506116-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 04-Jun-15

Date Extracted: 15-Jun-15

Date Analyzed: 16-Jun-15

Prep Method: SW3005 Rev A

Prep Batch: IP150615-5

QCBatchID: IP150615-5-1

Run ID: IT150616-1A2

Cleanup: NONE

Basis: As Received

File Name: 150616a.

Analyst: Steve Workman

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	69	30	6.8		
7440-70-2	CALCIUM	1	67000	1000	18		
7439-89-6	IRON	1	46	50	16	B,C	
7439-95-4	MAGNESIUM	1	22000	750	22		
7723-14-0	PHOSPHORUS	1	510	50	14		

Data Package ID: *it1506116-1*

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ALS1506116

# Dissolved ICP Metals

## Method SW6010B

### Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F13-0

Field ID:	B31MT6
Lab ID:	1506116-3

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 04-Jun-15

Date Extracted: 15-Jun-15

Date Analyzed: 16-Jun-15

Prep Method: SW3005 Rev A

Prep Batch: IP150615-5

QCBatchID: IP150615-5-1

Run ID: IT150616-1A2

Cleanup: NONE

Basis: As Received

File Name: 150616a.

Analyst: Steve Workman

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	63	30	6.8		
7440-70-2	CALCIUM	1	66000	1000	18		
7439-89-6	IRON	1	45	50	16	B,C	
7439-95-4	MAGNESIUM	1	21000	750	22		
7723-14-0	PHOSPHORUS	1	660	50	14		

Data Package ID: it1506116-1

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ALS1506116

# Dissolved ICP Metals

## Method SW6010B

### Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F13-0

Field ID:	B31MV1
Lab ID:	1506116-4

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 04-Jun-15

Date Extracted: 15-Jun-15

Date Analyzed: 16-Jun-15

Prep Method: SW3005 Rev A

Prep Batch: IP150615-5

QCBatchID: IP150615-5-1

Run ID: IT150616-1A2

Cleanup: NONE

Basis: As Received

File Name: 150616a.

Analyst: Steve Workman

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	62	30	6.8		
7440-70-2	CALCIUM	1	62000	1000	18		
7439-89-6	IRON	1	21	50	16	B,C	
7439-95-4	MAGNESIUM	1	21000	750	22		
7723-14-0	PHOSPHORUS	1	1200	50	14		

Data Package ID: it1506116-1

Date Printed: Friday, June 19, 2015

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ALS1506116

# Dissolved ICPMS Metals

## Method SW6020A

### Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F13-0

Field ID:	B2Y626
Lab ID:	1506116-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 04-Jun-15

Date Extracted: 15-Jun-15

Date Analyzed: 18-Jun-15

Prep Method: SW3005 Rev A

Prep Batch: IP150615-5

QCBatchID: IP150615-5-2

Run ID: IM150618-10A3

Cleanup: NONE

Basis: As Received

File Name: 005SMPL\_

Analyst: Brent A. Stanfield

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: 6020\_METALS\_I

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	19	50	19	U	
7440-38-2	ARSENIC	10	2.3	2	0.36		
7440-47-3	CHROMIUM	10	24	10	0.74		
7440-48-4	COBALT	10	0.21	1	0.21	U	
7440-50-8	COPPER	10	2	8	2	U	
7439-96-5	MANGANESE	10	0.74	5	0.74	U	
7439-98-7	MOLYBDENUM	10	4	1	0.44		
7440-02-0	NICKEL	10	2.3	5	2.3	U	
7782-49-2	SELENIUM	10	5.1	1	0.42		*
7440-24-6	STRONTIUM	10	260	1	0.38		
7440-66-6	ZINC	10	7.1	20	7.1	U	

Data Package ID: im1506116-1

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ALS1506116

# Dissolved ICPMS Metals

## Method SW6020A

### Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F13-0

Field ID:	B2Y630
Lab ID:	1506116-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 04-Jun-15

Date Extracted: 15-Jun-15

Date Analyzed: 18-Jun-15

Prep Method: SW3005 Rev A

Prep Batch: IP150615-5

QCBatchID: IP150615-5-2

Run ID: IM150618-10A3

Cleanup: NONE

Basis: As Received

File Name: 010SMPL\_

Analyst: Brent A. Stanfield

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: 6020\_METALS\_I

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	19	50	19	U	
7440-38-2	ARSENIC	10	1.7	2	0.36	B	
7440-47-3	CHROMIUM	10	4.3	10	0.74	B	
7440-48-4	COBALT	10	25	1	0.21		
7440-50-8	COPPER	10	4.1	8	2	B	
7439-96-5	MANGANESE	10	110	5	0.74		
7439-98-7	MOLYBDENUM	10	37	1	0.44		
7440-02-0	NICKEL	10	12	5	2.3		
7782-49-2	SELENIUM	10	3.8	1	0.42		
7440-24-6	STRONTIUM	10	270	1	0.38		
7440-66-6	ZINC	10	35	20	7.1		

Data Package ID: im1506116-1

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ALS1506116

# Dissolved ICPMS Metals

## Method SW6020A

### Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F13-0

Field ID:	B31MT6
Lab ID:	1506116-3

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 04-Jun-15

Date Extracted: 15-Jun-15

Date Analyzed: 18-Jun-15

Prep Method: SW3005 Rev A

Prep Batch: IP150615-5

QCBatchID: IP150615-5-2

Run ID: IM150618-10A3

Cleanup: NONE

Basis: As Received

File Name: 011SMPL\_

Analyst: Brent A. Stanfield

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: 6020\_METALS\_I

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	19	50	19	U	
7440-38-2	ARSENIC	10	1.2	2	0.36	B	
7440-47-3	CHROMIUM	10	2.6	10	0.74	B	
7440-48-4	COBALT	10	21	1	0.21		
7440-50-8	COPPER	10	2	8	2	U	
7439-96-5	MANGANESE	10	89	5	0.74		
7439-98-7	MOLYBDENUM	10	34	1	0.44		
7440-02-0	NICKEL	10	11	5	2.3		
7782-49-2	SELENIUM	10	5.4	1	0.42		
7440-24-6	STRONTIUM	10	260	1	0.38		
7440-66-6	ZINC	10	28	20	7.1		

Data Package ID: im1506116-1

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ALS1506116

# Dissolved ICPMS Metals

## Method SW6020A

### Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F13-0

Field ID:	B31MV1
Lab ID:	1506116-4

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 04-Jun-15

Date Extracted: 15-Jun-15

Date Analyzed: 18-Jun-15

Prep Method: SW3005 Rev A

Prep Batch: IP150615-5

QCBatchID: IP150615-5-2

Run ID: IM150618-10A3

Cleanup: NONE

Basis: As Received

File Name: 015SMPL\_

Analyst: Brent A. Stanfield

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: 6020\_METALS\_I

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	19	50	19	U	
7440-38-2	ARSENIC	10	0.36	2	0.36	U	
7440-47-3	CHROMIUM	10	2.8	10	0.74	B	
7440-48-4	COBALT	10	1.9	1	0.21		
7440-50-8	COPPER	10	19	8	2		
7439-96-5	MANGANESE	10	4.1	5	0.74	B	
7439-98-7	MOLYBDENUM	10	38	1	0.44		
7440-02-0	NICKEL	10	6.5	5	2.3		
7782-49-2	SELENIUM	10	5.8	1	0.42		
7440-24-6	STRONTIUM	10	260	1	0.38		
7440-66-6	ZINC	10	7.1	20	7.1	U	

Data Package ID: im1506116-1

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ALS1506116

## ICP Metals

### Method SW6010B

#### Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F13-0

Lab ID: IP150615-5MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 15-Jun-15

Date Analyzed: 16-Jun-15

Prep Batch: IP150615-5

QCBatchID: IP150615-5-1

Run ID: IT150616-1A2

Cleanup: NONE

Basis: N/A

File Name: 150616a.

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	6.8	30	6.8	U	
7440-70-2	CALCIUM	1	18	1000	18	U	
7439-89-6	IRON	1	18	50	16	B	
7439-95-4	MAGNESIUM	1	22	750	22	U	
7723-14-0	PHOSPHORUS	1	46	50	14	B	

Data Package ID: it1506116-1

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# ICP Metals

## Method SW6010B

### Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F13-0

Lab ID: IP150615-5LCS	Sample Matrix: WATER % Moisture: N/A Date Collected: N/A Date Extracted: 06/15/2015 Date Analyzed: 06/16/2015 Prep Method: SW3005A	Prep Batch: IP150615-5 QCBatchID: IP150615-5-1 Run ID: IT150616-1A2 Cleanup: NONE Basis: N/A File Name: 150616a.	Sample Aliquot: 50 ml Final Volume: 50 ml Result Units: UG/L Clean DF: 1
-----------------------	---	---	---

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-42-8	BORON	1000	1040	30		104	80 - 120%
7440-70-2	CALCIUM	40000	38800	1000		97	80 - 120%
7439-89-6	IRON	1000	881	50		88	80 - 120%
7439-95-4	MAGNESIUM	40000	39400	750		99	80 - 120%
7723-14-0	PHOSPHORUS	10000	10200	50		102	80 - 120%

Data Package ID: it1506116-1

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ALS1506116

# ICP Metals

Method SW6010B

## Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F

Field ID:	B2Y626
LabID:	1506116-1MS

Sample Matrix: WATER  
% Moisture: N/A  
Prep Batch: IP150615-5  
QCBatchID: IP150615-5-1  
Run ID: IT150616-1A2  
Date Collected: 04-Jun-15  
Date Extracted: 15-Jun-15  
Cleanup: NONE  
Date Analyzed: 16-Jun-15  
Basis: As Received  
Prep Method: SW3005 Rev A

Sample Aliquot: 50 ml  
Final Volume: 50 ml  
Result Units: UG/L  
File Name: 150616a.

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-42-8	BORON	43		1060		30	1000	101	80 - 120%
7440-70-2	CALCIUM	63000		103000		1000	40000	101	80 - 120%
7439-89-6	IRON	24	B,C	911		50	1000	89	80 - 120%
7439-95-4	MAGNESIUM	22000		59000		750	40000	94	80 - 120%
7723-14-0	PHOSPHORUS	41	B,C	9710		50	10000	97	80 - 120%

Field ID:	B2Y626
LabID:	1506116-1MSD

Sample Matrix: WATER  
% Moisture: N/A  
Prep Batch: IP150615-5  
QCBatchID: IP150615-5-1  
Run ID: IT150616-1A2  
Date Collected: 04-Jun-15  
Date Extracted: 15-Jun-15  
Cleanup: NONE  
Date Analyzed: 16-Jun-15  
Basis: As Received  
Prep Method: SW3005 Rev A

Sample Aliquot: 50 ml  
Final Volume: 50 ml  
Result Units: UG/L  
File Name: 150616a.

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-42-8	BORON	1060		1000	101	30	20	0
7440-70-2	CALCIUM	103000		40000	101	1000	20	0
7439-89-6	IRON	909		1000	89	50	20	0
7439-95-4	MAGNESIUM	59000		40000	94	750	20	0
7723-14-0	PHOSPHORUS	9780		10000	97	50	20	1

Data Package ID: it1506116-1

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ALS1506116

# ICPMS Metals

## Method SW6020A

### Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F13-0

Lab ID: IP150615-5MB	Sample Matrix: WATER % Moisture: N/A Date Collected: N/A Date Extracted: 15-Jun-15 Date Analyzed: 18-Jun-15	Prep Batch: IP150615-5 QCBatchID: IP150615-5-2 Run ID: IM150618-10A3 Cleanup: NONE Basis: N/A File Name: 016SMPL_	Sample Aliquot: 50 ml Final Volume: 50 ml Result Units: UG/L Clean DF: 1
----------------------	---	--	---

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	19	50	19	U	
7440-38-2	ARSENIC	10	0.36	2	0.36	U	
7440-47-3	CHROMIUM	10	0.74	10	0.74	U	
7440-48-4	COBALT	10	0.21	1	0.21	U	
7440-50-8	COPPER	10	2	8	2	U	
7439-96-5	MANGANESE	10	0.74	5	0.74	U	
7439-98-7	MOLYBDENUM	10	0.44	1	0.44	U	
7440-02-0	NICKEL	10	2.3	5	2.3	U	
7782-49-2	SELENIUM	10	0.42	1	0.42	U	
7440-24-6	STRONTIUM	10	0.38	1	0.38	U	
7440-66-6	ZINC	10	7.1	20	7.1	U	

Data Package ID: im1506116-1

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# ICPMS Metals

## Method SW6020A

### Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F13-0

Lab ID: IM150615-5LCS	Sample Matrix: WATER % Moisture: N/A Date Collected: N/A Date Extracted: 06/15/2015 Date Analyzed: 06/18/2015 Prep Method: SW3005A	Prep Batch: IP150615-5 QCBatchID: IP150615-5-2 Run ID: IM150618-10A3 Cleanup: NONE Basis: N/A File Name: 004SMPL_	Sample Aliquot: 50 ml Final Volume: 50 ml Result Units: UG/L Clean DF: 1
-----------------------	---	--	---

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7429-90-5	ALUMINUM	5000	5200	50		104	80 - 120%
7440-38-2	ARSENIC	100	109	2		109	80 - 120%
7440-47-3	CHROMIUM	500	517	10		103	80 - 120%
7440-48-4	COBALT	100	106	1		106	80 - 120%
7440-50-8	COPPER	1000	1090	8		109	80 - 120%
7439-96-5	MANGANESE	100	105	5		105	80 - 120%
7439-98-7	MOLYBDENUM	100	102	1		102	80 - 120%
7440-02-0	NICKEL	500	527	5		105	80 - 120%
7782-49-2	SELENIUM	100	115	1		115	80 - 120%
7440-24-6	STRONTIUM	100	108	1		108	80 - 120%
7440-66-6	ZINC	2000	2110	20		106	80 - 120%

Data Package ID: im1506116-1

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ALS1506116

## ICPMS Metals

Method SW6020A

### Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F

Field ID:	B2Y626
LabID:	1506116-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 04-Jun-15

Date Extracted: 15-Jun-15

Date Analyzed: 18-Jun-15

Prep Method: SW3005 Rev A

Prep Batch: IP150615-5

QCBatchID: IP150615-5-2

Run ID: IM150618-10A3

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

File Name: 008SMPL\_

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7429-90-5	ALUMINUM	19	U	5150		50	5000	103	75 - 125%
7440-38-2	ARSENIC	2.3		111		2	100	108	75 - 125%
7440-47-3	CHROMIUM	24		550		10	500	105	75 - 125%
7440-48-4	COBALT	0.21	U	109		1	100	109	75 - 125%
7440-50-8	COPPER	2	U	1100		8	1000	110	75 - 125%
7439-96-5	MANGANESE	0.74	U	108		5	100	108	75 - 125%
7439-98-7	MOLYBDENUM	4		111		1	100	107	75 - 125%
7440-02-0	NICKEL	2.3	U	532		5	500	106	75 - 125%
7782-49-2	SELENIUM	5.1		111		1	100	106	75 - 125%
7440-24-6	STRONTIUM	260		368		1	100	110	75 - 125%
7440-66-6	ZINC	7.1	U	2140		20	2000	107	75 - 125%

Data Package ID: im1506116-1

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ALS1506116

# ICPMS Metals

## Method SW6020A

### Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1506116

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - FBR Micronutrient Analysis - Water F

Field ID:	B2Y626
LabID:	1506116-1MSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 04-Jun-15

Prep Batch: IP150615-5

QCBatchID: IP150615-5-2

Date Extracted: 15-Jun-15

Run ID: IM150618-10A3

Date Analyzed: 18-Jun-15

Cleanup: NONE

Prep Method: SW3005 Rev A

Basis: As Received

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

File Name: 042SMPL\_

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7429-90-5	ALUMINUM	5410		5000	108	50	20	5
7440-38-2	ARSENIC	117		100	115	2	20	6
7440-47-3	CHROMIUM	564		500	108	10	20	2
7440-48-4	COBALT	108		100	108	1	20	1
7440-50-8	COPPER	1110		1000	111	8	20	0
7439-96-5	MANGANESE	110		100	110	5	20	2
7439-98-7	MOLYBDENUM	114		100	110	1	20	2
7440-02-0	NICKEL	544		500	109	5	20	2
7782-49-2	SELENIUM	114		100	108	1	20	3
7440-24-6	STRONTIUM	375		100	118	1	20	2
7440-66-6	ZINC	2230		2000	111	20	20	4

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